



## NC ENERGY CONSERVATION CODE CHAPTER 805 LIGHTING CHANGE UPDATE

### 1. Lighting Code Changes – Covers all but “Dwelling Units”

#### a. Lighting Controls

- i. All enclosed rooms except security or emergency area, corridors, stairs, public lobbies, toilets, and storage rooms
- ii. Only 1 light switch is required if:
  1. Room only has 1 light fixture, or
  2. There is an occupancy sensor
  3. Power level is  $<0.6$  W/SF
- iii. If there are 2 or more lights in a room, you must reduce the lighting level “Uniformly” by at least 50%, unless there is an occupancy sensor in area or the power load is less than 0.6W/SF
- iv. If the building or area is  $> 5000$ SF, then you have to have an automatic control to shut off the lighting on a scheduled basis – except for patient care or safety or security rooms – must have an override switch for  $< 2$  hours and  $< 5,000$ SF OR use motion detectors
- v. For exterior lighting, must have an automatic timer with a programmable schedule and a battery back-up or a photocell.
- vi. Incandescent is not permitted for exterior. The source of all exterior lamps must have a source efficiency of 45 lumens/watt.

#### b. Power Levels

- i. Interior Lighting Maximum Levels
  1. Office – 1.0W/SF
  2. Retail – 1.5W/SF Additional 1.6-3.9W/SF
  3. Restaurant – 1.6W/SF Additional 1.0W/SF
  4. Schools – 1.2W/SF
  5. Most are 1.0 to 1.2W/SF

## **2. How does these changes tie into LEED**

- a. Dark Skies – Must meet IES RP 33 maximum lighting levels. All fixtures over 1000 lumens must be shielded, all fixtures over 3500 lumens must have full cutoff. Maximum candela ratings must be within property lines. This implies that a photometric must be done to prove results
- b. Controls – 90% of building occupants must have control of their lighting AND the entire building lighting system shall have controls
- c. Power Levels
  - i. New Buildings: 10.5% to 42% less than ASHRAE standards (1 to 10 points) – lighting is approximately 25% of load, so reductions below levels above help greatly
  - ii. Existing Buildings: 3.5% to 35% less than ASHRAE standards (1 to 10 points)